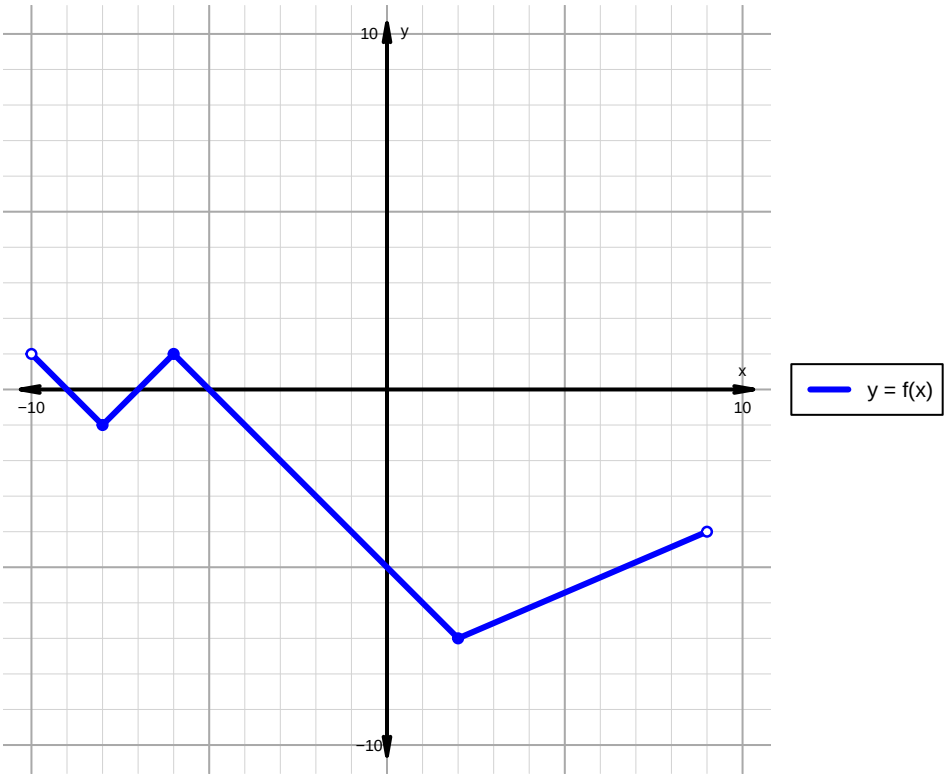
Name: Date:

Intervals, Transformations, and Slope Solution (version 136)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-10,-9)\cup(-7,-5)$
Negative	$(-9,-7)\cup(-5,9)$
Increasing	$(-8,-6)\cup(2,9)$
Decreasing	$(-10,-8)\cup(-6,2)$
Domain	$(-10,9)$
Range	$(-7,1)$

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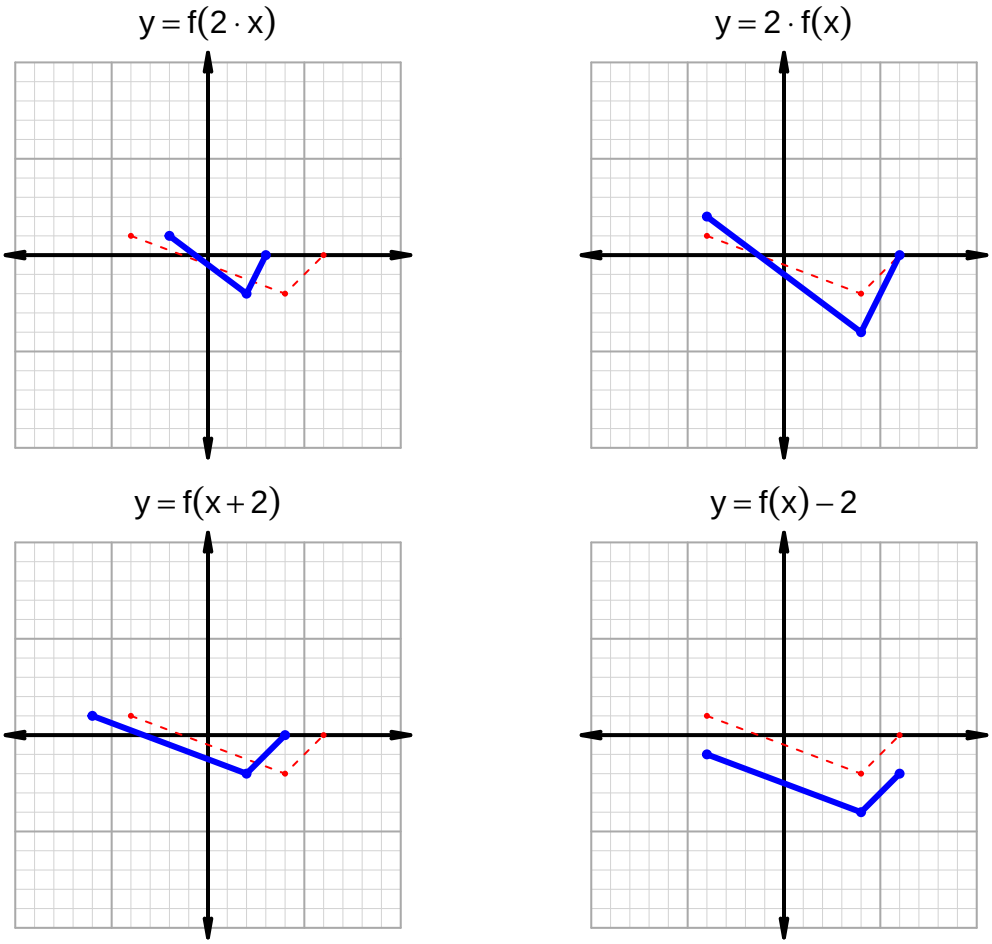
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 78$ and $x_2 = 87$. Express your answer as a reduced fraction.

x	$g(x)$
33	78
48	87
78	48
87	33

$\frac{f(87)-f(78)}{87-78} = \frac{33-48}{87-78} = \frac{-15}{9}$

The greatest common factor of -15 and 9 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-5}{3}$$